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B.Noel Kivlin
Meyertons Hood Kivlin Kowert & Goetzel P
PO Box 398
Austin, TX 78767-0398

| EXAMINER | |
|---|---|
| DANG, KHANH | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2111 | |

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/690,121 | LE ET AL. | |
| | Examiner | Art Unit | |
| | Khanh Dang | 2111 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *2/21/2006 AMENDMENT*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20060221*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Larson et al. (Larson, 2003/0033464).

As broadly drafted, these claims do not define any structure that differs from Larson.

With regard to claim 1, Larson discloses a method of mapping a plurality of states for controlling hot-swappability in a Compact Peripheral Component Interconnect (CPCI) system (see at lest the abstract), said method comprising: specifying a hot-swap state of a CPCI node card for controlling hot-swappability of said CPCI node card (the system of Larson is a CPCI and therefore, must be in full compliance with the CompactPCI specification, and particularly CompactPCI Hotswap Specification, which support hot swap states including hot insertion and removal of CPCI node card; see also Larson, [0061]); mapping said hot-swap state onto an intermediate state by

searching a common library associated with the node card and a management software for the node card (the FPGA includes 18 hot swap statuses, and it is clear that a hot-swap state of a node card must be correspond to one of the 18 states/statuses of the FPGA associated with the node card and software management so that a hotswap state can be recognized by the FPGA; see at least [0061]-[0064]); and mapping said intermediate state onto a first management state of said management software and a second management state of said management software (in CompactPCI Hotswap Specification, availability of the card and operational state of the card is determined using software control (BDSEL# and HEALTHY#), see at least Hot Swap in CompactPCI Systems, cited below; in particular, in Larson, it is clear that management software is used in conjunction with the system management card 300E to monitor "BD SEL" and "HEALTHY" and the state of the hot-swap is mapped from the FPGA hot-swap status to the hot-swap states of the management software; see at least [0063] – [0064]); wherein said management software requires both said first and second management states to manage said front card (it is clear that according to the CompactPCI Hotswap Specification and particularly Larson, for management purpose, availability of the card and operational state of the card must be monitored and determined (BDSEL# and HEALTHY#).

With regard to claim 2, Larson further discloses specifying a second hot-swap state of said CPCI node card for controlling hot-swappability of said CPCI node card (another one of the 18 hot-swap states); specifying a transition state of said CPCI node card when said node card transitions from said first hot-swap state to said second-hot

swap state (from card select (when the card is installed, for example) to "healthy" state (when the card is healthy); mapping said transition state onto an intermediate transition state by searching a common library associated with said node card (the FPGA includes 18 hot swap statuses, and it is clear that a hotswap state of a node card must be correspond to one of the 18 states/statuses of the FPGA associated with the node card and software management so that a hotswap state can be recognized by the FPGA; see at least [0061]-[0064]).

With regard to claim 3, Larson further discloses notifying said management software of said intermediate transition state using the FPGA.

With regard to claim 4, Larson further discloses mapping said intermediate transition state onto a third management state of said management software and a fourth management state of said management software (among the 18 states maintained by the FPGA).

With regard to claim 5, it is clear that in Larson, the first and third management states comprise a first operational state and a second operation state and wherein said second and fourth management states comprise a first availability state and a second availability state (see at least [0036], [0053], [0062]-[0063]).

With regard to claim 6, it is clear that CPCI node is a plug and play unit according to the PCI and CPCI specification.

With regard to claim 7, see discussion above regarding claim 1. Note that the CPCI system of Larson must be in full compliance of CompactPCI specification, and particularly CompactPCI Hotswap Specification, associated with the **PICMG** (PCI

Industrial Computer Manufacturers Group). PICMG is a consortium of over 450 companies who collaboratively develop open specifications including CPCI specification for high performance telecommunications and industrial computing applications. Note also that it is clear that the hop swappable nodes/CPCI Network of Larson meets the requirements set forth in Telecommunication Management Network (TMN). See An introduction to TMN cited below.

With regard to claim 8, it is clear that the FPGA includes the "common library" comprising a plurality of states.

With regard to claim 9, it is clear that CPCI node is a plug and play unit according to the PCI and CPCI specification. Further, it is clear that the hop swappable nodes/CPCI Network of Larson meet the requirements set forth in Telecommunication Management Network (TMN). See "An introduction to TMN" cited below.

With regard to claim 10, Larson discloses a Compact Peripheral Component Interconnect (CPCI) system, comprising: a CPCI chassis (see at least Fig. 1, and description thereof); a circuit board forming a backplane within said chassis (see at least Figs.2 and 3, and description thereof); a CPCI node card (300) coupled with said circuit board, said node card providing a hot-swap state (the system of Larson is a CPCI and therefore, must be in full compliance with the CompactPCI specification, and particularly CompactPCI Hotswap Specification, which support hot swap states including hot insertion and removal of CPCI node card; see also Larson, [0061]); a manager for managing said CPCI card using a first management state and a second management state (manager card 300E, for example; in CompactPCI Hotswap Specification,

availability of the card and operational state of the card is determined using software control (BDSEL# and HEALTHY#), see at least Hot Swap in CompactPCI Systems, cited below; in particular, in Larson, it is clear that management software is used in conjunction with the system management card 300E to monitor “BD SEL” and “HEALTHY” and the state of the hotswap is mapped from the FPGA hotswap status to the hotswap states of the management node/card; see at least [0063] –[0064]); a common library associated with said CPCI node card and said manager (the FPGA includes 18 hot swap statuses, and it is clear that a hotswap state of a node card must be correspond to one of the 18 states/statuses of the FPGA associated with the node card and software management so that a hotswap state can be recognized by the FPGA; see at least [0061]-[0064]), said common library providing an intermediate state; wherein said hot swap state is mapped onto said intermediate state of said common library; and wherein said intermediate state is mapped onto said first and second management states of said manager (in CompactPCI Hotswap Specification, availability of the card and operational state of the card is determined (BDSEL# and HEALTHY#), see at least Hot Swap in CompactPCI Systems, cited below; in particular, in Larson, it is clear that management software is used in conjunction with the system management card 300E to monitor “BD SEL” and “HEALTHY” and the state of the hotswap is mapped from the FPGA hotswap status to the hotswap states of the management node; see at least [0063] –[0064]).

With regard to claim 11, as discussed above, it is clear that the management node/card requires said hot-swap state to be mapped onto said first and second

management states via said intermediate state, provided by the FPGA, to manage said CPCI node card.

With regard to claim 12, It is clear that the management node/card 300E manages said CPCI node card 300 as a plug-in unit once said hot-swap state has been mapped onto said first and second management states via said intermediate state.

With regard to claim 13, it is clear that the hop swappable node/card 300 nodes/CPCI Network of Larson meets the requirements set forth in Telecommunication Management Network (TMN). See An introduction to TMN cited below.

With regard to claim 14, it is clear that the hot-swap state describes a hot-swap status of said CPCI node card.

With regard to claim 15, it is clear that according to CompactPCI Hotswap Specification, management states include availability of the card and operational state of the card (BDSEL# and HEALTHY#).

With regard to claim 16, according to Larson, which is in full compliance with CompactPCI Hotswap Specification, it is clear that the operational state comprises one of a null-operational state, an up-operational state, a down-operational state, and an unknown-operational state.

With regard to claim 17, according to Larson, which is in full compliance with CompactPCI Hotswap Specification, it is clear that the availability state comprises one of a null-availability state, a power-off-availability state, an offline-availability state, an available-availability state, a failed-availability state, and an unknown-availability state.

With regard to claim 18, according to Larson, which is in full compliance with CompactPCI Hotswap Specification, and in view of the above discussion, it is clear that the intermediate state comprises one of a no plug-in state, a first power-off state, a second power-off state, a first unavailable-state, a second unavailable-state, an available state, a failed state, and an unknown state.

With regard to claim 19, it is clear from the above discussion that the hot-swap state comprises a plurality of states for indicating plug-in status.

With regard to claim 20, according to Larson, which is in full compliance with CompactPCI Hotswap Specification, and in view of the above discussion, it is clear that the said hot-swap state comprises one of a first state for indicating a plug-in unit is present, but not powered on; a second state for indicating a plug-in unit is powered up, but not connected; a third state for indicating a plug-in unit is connected; a fourth state for indicating a plug-in unit is configured, but drivers are not loaded and associated; a fifth state for indicating a plug-in unit is configured and drivers are loaded and associated; a sixth state for indicating a plug-in unit is in use; and two failed states.

With regard to claim 21, it is clear that the management node/card works in conjunction with software. Further, it is clear that the hop swappable node/card 300 nodes/CPCI Network of Larson meets the requirements set forth in Telecommunication Management Network (TMN). See An introduction to TMN cited below.

With regard to claim 22, in Larson, the CPCI Hot Swap is completely automatic and totally without the need of an operator. Thus, it is clear that the CPCI system and hot-swap state disclosed by Larson comprises a state based on a PCI Industrial

Computer Manufactures Group (PICMG) hot-swap/High Availability (HA) specification. See discussion above regarding PICMG and see also TechOnLine: Part 3: Implementing High Availability Compact PCI, Implementing the HIP1011 on Hot Swap CPCI Boards for High Availability (HA) Platforms, and Highly Available Networking, all cited below.

With regard to claim 23, it is clear that the management node/card 300E manages said CPCI node card 300 as a plug-in unit once said hot-swap state has been mapped onto said first and second management states via said intermediate state. Further, it is clear that the management node/card works in conjunction with software. Further, it is clear that the hop swappable node/card 300 nodes/CPCI Network of Larson meets the requirements set forth in Telecommunication Management Network (TMN). See An introduction to TMN cited below.

***Response to Arguments***

Applicants' arguments filed 2/21/2006 have been fully considered but they are not persuasive.

At the outset, Applicants are reminded that claims subject to examination will be given their broadest reasonable interpretation consistent with the specification. *In re Morris, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997)*. In fact, the "examiner has the duty of police claim language by giving it the broadest reasonable interpretation." *Springs Window Fashions LP v. Novo Industries, L.P.,* 65 USPQ2d 1862, 1830, (Fed. Cir. 2003). Applicants are also reminded that claimed subject matter not the specification, is

the measure of the invention. Disclosure contained in the specification cannot be read into the claims for the purpose of avoiding the prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d, 155 USPQ 687 (1986).

With this in mind, the discussion will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitations that are not in the claims or any arguments that are irrelevant and/or do not relate to any specific claim language will not be warranted.

**The 35 USC 112, 2nd Paragraph Rejection:**

The 35 USC 112, 2nd paragraph rejection is hereby withdrawn in view of the amendment.

**The 35 U.S.C. 102(e) Rejection:**

With regard to claims 1 and 10, Applicants argue that "it is clear to Applicant that Larson does not teach intermediate states or mapping hot-swap states, and that FPGA 508 has 18 status inputs that may be use by a number of different units being managed (e.g., fans, host processor card, switch cards, etc.), not 18 status states as the Examiner has suggested. It is also clear that FPGA 18 functions as an interface unit that generates interrupts to SMC 300E that indicate when cards are removed or installed. Further, although Larson teaches in paragraph (0073) "higher-level management software such as Openview, Network Node Manager, Tivoli, TopTools, and others, can self-discover and fault manage a server system," Larson does not state anywhere that

the management software uses a common library or that hot-swap states must be mapped to intermediate states."

At the output, it is noted that claims 1 and 10 require "mapping said <u>hot-swap state</u> onto <u>an intermediate state</u> by searching a common library associated with said CPCI node card and a management software for CPCI node card" (emphasis added). It is clear that claim 1 does not require "intermediate states or mapping hot-swap states" and that "hot-swap states must be mapped to intermediate states."

In Larson, "[l]ines 522B are hot swap lines for monitoring the hot swap status of cards 300. In one embodiment, hot swap lines 522B include 18 hot swap status input lines, which allow SMC 300E to determine the hot swap status of the host processor cards 300A, hard disk cards 300B, managed Ethernet switch cards 300C and 300D, SMC rear transition modules 300F and 300G, and power supply units 114." See [0036]. Note also that the "card" or "cards" in Larson refers to CPCI node card or node cards. The so-called "common library" provided by the FPGA includes 18 hot-swap statuses/states provided by the hot-swap status input lines. In another word, the FPGA includes 18 hot swap statuses for the CPCI node cards, and a hot-swap status/state of a node card must be correspond to or associated with one of the 18 states/statuses of the FPGA associated with the CPI node card and software management so that a hot-swap state can be recognized by the FPGA. See at least [0061]-[0064]. With regard to the "management software" and "mapping said intermediate state onto a first management state of said management software and a second management state of said management software," it is clear that in CompactPCI

(CPCI) Hot-swap Specification, availability of the card and operational state of the card is determined using software control (BDSEL# and HEALTHY#), see at least Hot Swap in CompactPCI Systems, cited the previous Office Action. In particular, in Larson, it is clear that management software is used in conjunction with the system management card 300E, for example, to monitor "BD SEL" and "HEALTHY" and the state of the hotswap is mapped from the FPGA hot-swap status to the hot-swap states of the management software. See at least [0063] –[0064].

In any event, Larson discloses "6 sets of input/output lines 522A-522F… Lines 522B are hot swap lines for monitoring the hot swap status of cards 300. In one [exemplary] embodiment, hot swap lines 522B include 18 hot swap status input lines". (emphasis added). See [0036]. Thus, it is clear that each swap line includes a plurality of hot swap statuses (states) inputs. As a matter of fact, according to CompactPCI (CPCI) Hot-swap Specification, hot-swap of a card always involves a plurality of hot-swap states. For example, see Intersil, Implementing the HIP1011 on Hot Swap CPCI Boards for High Availability (HA) Platforms, as cited in the previous Office Action, hot-swap of a card always involves a plurality of hot-swap states. See the following diagrams from Intersil, cited in the previous Office Action:

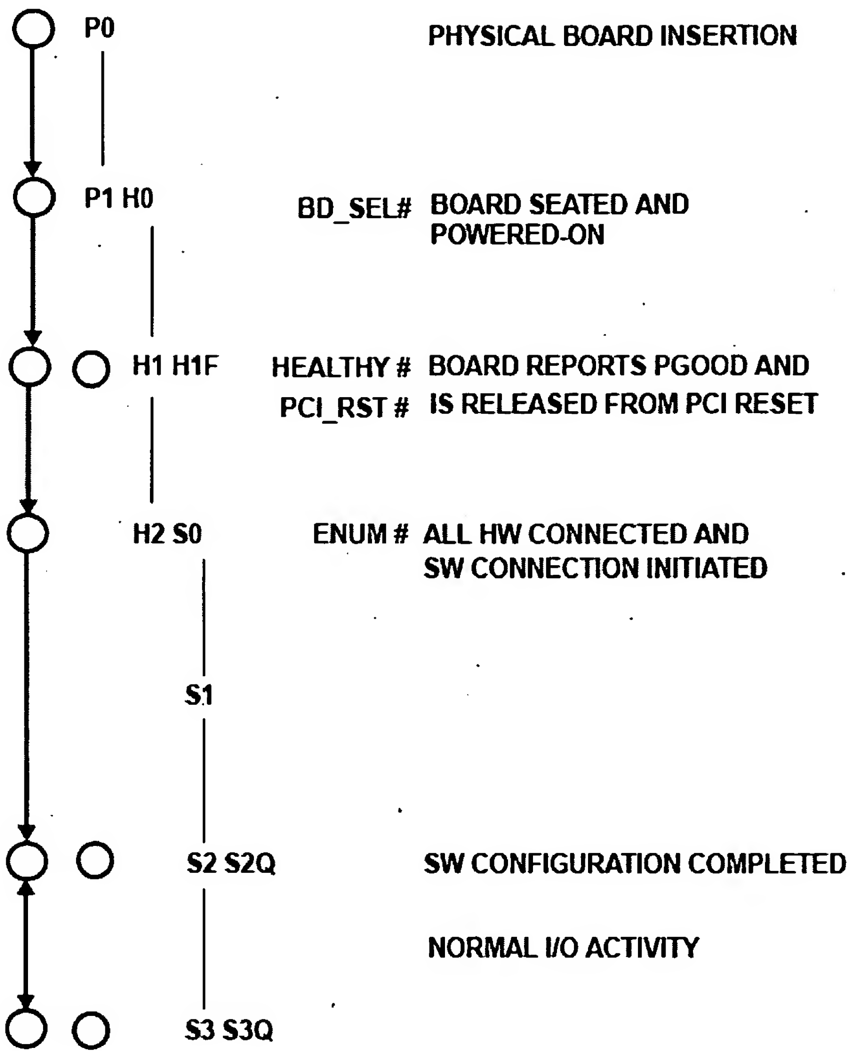
P0
PHYSICAL BOARD INSERTION
P1 H0
BD_SEL# BOARD SEATED AND POWERED-ON
H1 H1F
HEALTHY # BOARD REPORTS PGOOD AND
PCI_RST # IS RELEASED FROM PCI RESET
H2 S0
ENUM # ALL HW CONNECTED AND SW CONNECTION INITIATED
S1
S2 S2Q
SW CONFIGURATION COMPLETED
NORMAL I/O ACTIVITY
S3 S3Q

FIGURE 1.

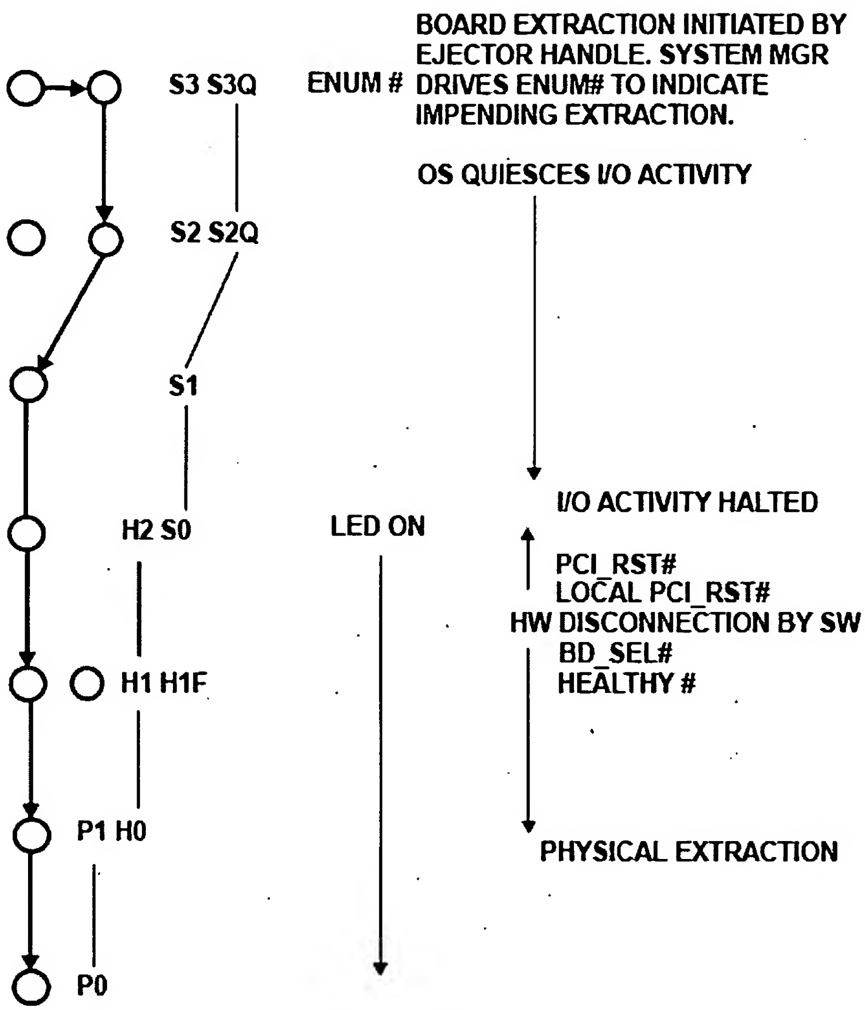
BOARD EXTRACTION INITIATED BY EJECTOR HANDLE. SYSTEM MGR DRIVES ENUM# TO INDICATE IMPENDING EXTRACTION.
S3 S3Q
ENUM #
OS QUIESCES I/O ACTIVITY
S2 S2Q
S1
I/O ACTIVITY HALTED
H2 S0
LED ON
PCI_RST#
LOCAL PCI_RST#
HW DISCONNECTION BY SW
BD_SEL#
HEALTHY #
H1 H1F
P1 H0
PHYSICAL EXTRACTION
P0

FIGURE 2.

With regard to claim 7, Applicants argue that 'Applicant's claim 7 recites a method comprising in pertinent part "mapping said PICMG hot-swap state onto an intermediate state by searching a common library associated with said CPCI node card and a management software for said CPCI node card; and mapping said intermediate state onto a Telecommunication Management Network (TMN) plug-in unit state of said management software; wherein said management software requires said TMN plug-in unit state to manage said CPCI node card.' As described above, Applicant submits these features are not taught by Larson."

In response to Applicants' argument, see discussion above with regard to claims 1 and 10. Note that the CPCI system of Larson must be in full compliance of CompactPCI specification, and particularly CompactPCI Hotswap Specification, associated with the **PICMG** (PCI Industrial Computer Manufacturers Group). PICMG is a consortium of over 450 companies who collaboratively develop open specifications including CPCI specification for high performance telecommunications and industrial computing applications. Note also that it is clear that the hop swappable nodes/CPCI Network of Larson meets the requirements set forth in Telecommunication Management Network (TMN). See An introduction to TMN cited in the previous Office Action.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Khanh Dang at telephone number 571-272-3626.

Khanh Dang

Khanh Dang
Primary Examiner